IN THE CLAIMS

Please amend the claims as follows:

1.-36. (PREVIOUSLY CANCELLED)

37. (CURRENTLY AMENDED) A system of controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor operable to generate a first sensing voltage indicative of a voltage across the lamp;

a current sensor operable to generate a second sensing voltage indicative of a current through the lamp; and

a control circuit operable to approximate a lamp power as a function of the first sensing voltage and the second sensing voltage, to compare the approximated lamp power and a reference voltage, and to regulate the power to the lamp based on the comparison of the approximated lamp power and the reference voltage,

wherein said control circuit includes a summing circuit operable to generate a summation voltage as a function of a summation of the first sensing voltage and the second sensing voltage, the summation voltage being indicative of the approximated lamp power;

wherein said voltage sensor is in electrical communication with said control circuit to apply the first sensing voltage to said control circuit, and

wherein said current sensor is in electrical communication with said control circuit to apply the second sensing voltage to said control circuit.

38. (PREVIOUSLY PRESENTED) The system of claim 37,

wherein said voltage sensor includes a voltage divider connected to said lamp to thereby generate the first sensing voltage; and

wherein said voltage divider is further connected to said control circuit to thereby apply the first sensing voltage to said control circuit.

39. (PREVIOUSLY PRESENTED) The system of claim 37,

wherein said current sensor includes a resistor connected to said lamp to thereby generate the second sensing voltage; and

wherein said resistor is further connected to said control circuit to thereby apply the second sensing voltage to said control circuit.

40. (PREVIOUSLY PRESENTED) The system of claim 39,

wherein said voltage sensor includes a voltage divider connected to said lamp to thereby generate the first sensing voltage; and

wherein said voltage divider is further connected to said control circuit to thereby apply the first sensing voltage to said control circuit.

41. (CURRENTLY AMENDED) ~~The~~ A system ~~of claim 37~~ controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor operable to generate a first sensing voltage indicative of a voltage across the lamp;

a current sensor operable to generate a second sensing voltage indicative of a current through the lamp; and

a control circuit operable to approximate a lamp power as a function of the first sensing voltage and the second sensing voltage, to compare the approximated lamp power and a reference voltage, and to regulate the power to the lamp based on the comparison of the approximated lamp power and the reference voltage,

wherein said voltage sensor is in electrical communication with said control circuit to apply the first sensing voltage to

said control circuit, and

wherein said current sensor is in electrical communication with said control circuit to apply the second sensing voltage to said control circuit,

wherein said control circuit includes:

a summing circuit operable to generate a summation voltage as a function of a summation of the first sensing voltage and the second sensing voltage, the summation voltage being indicative of the approximated lamp power;

a reference generator operable to generate the reference voltage; and

a comparator in electric communication with said summing circuit whereby the summation voltage is applied to said comparator and in electric communication with said reference generator whereby the reference voltage is applied to said comparator, said comparator operable to compare the summation voltage and the reference voltage to thereby generate a control voltage for regulating the power to the lamp.

42. (PREVIOUSLY PRESENTED) The system of claim 41,

wherein said summing circuit includes means for adding a first absolute value of the first sensing signal and a second absolute value of the second sensing signal to thereby generate the summation voltage.

43. (PREVIOUSLY PRESENTED) The system of claim 41,

wherein said summing circuit includes means for adding a first average of the first sensing signal and a second average of the second sensing signal to thereby generate the summation voltage.

44. (PREVIOUSLY PRESENTED) The system of claim 41,

wherein the reference voltage has a sawtooth waveform.

45. (PREVIOUSLY PRESENTED) The system of claim 41, wherein said control circuit further includes:

a current limiting circuit in electric communication with said comparator whereby the control voltage is applied to said current limiting circuit,

wherein said current limiting circuit is operable to transition among a plurality of inductive states as a function of the control voltage, and

wherein the current limiting circuit is in electric communication with said lamp to regulate the power to the lamp as a function of the plurality of the inductive states.

46. (CURRENTLY AMENDED) ~~The~~ A system of ~~claim 37~~ controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor operable to generate a first sensing voltage indicative of a voltage across the lamp;

a current sensor operable to generate a second sensing voltage indicative of a current through the lamp; and

a control circuit operable to approximate a lamp power as a function of the first sensing voltage and the second sensing voltage, to compare the approximated lamp power and a reference voltage, and to regulate the power to the lamp based on the comparison of the approximated lamp power and the reference voltage,

wherein said voltage sensor is in electrical communication with said control circuit to apply the first sensing voltage to said control circuit, and

wherein said current sensor is in electrical communication with said control circuit to apply the second sensing voltage to said control circuit, wherein said control circuit includes:

a signal conditioner operable to amplify the second sensing voltage;

a summing circuit in electric communication with said

signal conditioner whereby the amplified second sensing voltage is applied to said summing circuit, said summing circuit operable to generate a summation voltage as a function of a summation of the first sensing voltage and the amplified second sensing voltage, the summation voltage being indicative of the approximated lamp power;

a reference generator operable to generate the reference voltage; and

a comparator in electric communication with said summing circuit whereby the summation voltage is applied to said comparator and in electric communication with said reference generator whereby the reference voltage is applied to said comparator, said comparator operable to compare the summation voltage and the reference voltage to thereby generate a control voltage for regulating the power to the lamp.

47. (PREVIOUSLY PRESENTED) The system of claim 46,

wherein said summing circuit includes means for adding a first absolute value of the first sensing signal and a second absolute value of the amplified second sensing signal to thereby generate the summation voltage.

48. (PREVIOUSLY PRESENTED) The system of claim 46,

wherein said summing circuit includes means for adding a first average of the first sensing signal and a second average of the amplified second sensing signal to thereby generate the summation voltage.

49. (PREVIOUSLY PRESENTED) The system of claim 46,

wherein the reference voltage has a sawtooth waveform.

50. (PREVIOUSLY PRESENTED) The system of claim 46, wherein said control circuit further includes:

a current limiting circuit in electric communication with

said comparator whereby the control voltage is applied to said current limiting circuit,

wherein said current limiting circuit is operable to transition among a plurality of inductive states as a function of the control voltage, and

wherein the current limiting circuit in electric communication with said lamp to regulate the power to the lamp as a function of the plurality of inductive states.

51. (PREVIOUSLY PRESENTED) A system of controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor operable to generate a first sensing voltage indicative of a voltage across the lamp;

a current sensor operable to generate a second sensing voltage indicative of a current through the lamp; and

a control circuit including

means for amplifying the second sensing signal,

means for adding a first absolute value of the first sensing signal and a second absolute value of the amplified second sensing signal to thereby generate a summation voltage indicative of an approximated lamp power, and

means for comparing the summation voltage to a reference voltage to thereby generate a control voltage for regulating the power of the lamp.

52. (PREVIOUSLY PRESENTED) The system of claim 51,

wherein the reference voltage has a sawtooth waveform.

53. (PREVIOUSLY PRESENTED) The system of claim 51, wherein said control circuit further includes:

means for transitioning among a plurality of inductive states as a function of the control voltage to thereby regulate the power to the lamp.

54. (PREVIOUSLY PRESENTED) A system of controlling power to a high-intensity-discharge lamp, said system comprising:

a voltage sensor operable to generate a first sensing voltage indicative of a voltage across the lamp;

a current sensor operable to generate a second sensing voltage indicative of a current through the lamp; and

a control circuit including

means for amplifying the second sensing signal,

means for adding a first average of the first sensing signal and a second average of the amplified second sensing signal to thereby generate a summation voltage indicative of an approximated lamp power;

means for comparing the summation voltage to a reference voltage to thereby generate a comparison voltage for regulating the power of the lamp.

55. (PREVIOUSLY PRESENTED) The system of claim 54, wherein the reference voltage has a sawtooth waveform.

56. (PREVIOUSLY PRESENTED) The system of claim 54, wherein said control circuit further includes:

means for transitioning among a plurality of inductive states as a function of the control voltage to thereby regulate the power to the lamp.